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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,750	11/30/2001	Judith A. Bayer	9998	7009

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EXAMINER	
LASTRA, DANIEL	
ART UNIT	**PAPER NUMBER**
3622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/998,750	BAYER ET AL.	
	Examiner	Art Unit	
	DANIEL LASTRA	3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-21 have been examined. Application 09/998,750 (AUTOMATED PROMOTION RESPONSE MODELING IN A CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM) has a filing date 11/30/2001.

Response to Amendment

2. In response to Non Final Rejection filed 10/04/2006, the Applicant filed an Amendment on 01/04/2007, which amended claims 1, 8 and 15. Applicant's amendment overcame the Section 101 rejection and 112 rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Cook (US 6,631,360).

Claim 1, Cook teaches:

A computer-implemented method of creating customer promotion response models for use in customer relationship marketing, comprising.

(a) defining an input data set for the response models, wherein the input data set is comprised of one or more Analytic Variables that are subdivided into independent and dependent variables (see col 12, lines 17-22) ;

(b) splitting the input data set into a test sample and a validation sample (see col 10, line 55 – col 11, line 20);

(c) identifying related independent and dependent variables using the test sample (see col 12, lines 5-45);

(d) identifying a Transformation Type for each of the identified related independent and dependent variables (see col 11, lines 20-65 "estimated density function");

(e) estimating a Coefficient for each of the identified related independent and dependent variables (see col 14, lines 55-65 "each element in a decision array there is a gain or loss");

(f) generating a Model Equation for each of the identified related independent and dependent variables using the identified Transformation Type and estimated Coefficient (see col 13, lines 5-45 "Gaussian Density function");

(g) validating the generated Model Equation by applying it to the validation sample (see col 11, lines 5-20 "calibration"; and

(h) scoring customers retrieved from a database using the validated Model Equation *as a customer promotion response model for use in customer relationship marketing* (see col 11, lines 50-67).

Claim 2, Cook teaches:

The method of claim 1, wherein the Transformation Type is a mathematical operation that identifies an association between the identified related independent and dependent variables (see col 12, lines 5-45).

Claim 3, Cook teaches:

The method of claim 1, wherein the Coefficient is a relative measure of the identified related independent and dependent variables contributions to a likelihood of response (see col 12, lines 5-20; col 13, lines 25-45).

Claim 4, Cook teaches:

The method of claim 1, wherein the Coefficient's sign indicates whether the independent variable is positively or negatively correlated with the dependent variable (see col 14, lines 55-65; "gain or loss").

Claim 5, Cook teaches:

The method of claim 1, wherein the Model Equation is a mathematical representation of the association of the identified related independent and dependent variables that result in the statistical best fit of known responders versus non-responders (see col 12, lines 5-12).

Claim 6, Cook teaches:

The method of claim 1, wherein the validating step (g) further comprises applying the generated Model Equation to the validation sample in order to predict a likelihood of response as compared to an actual response in the validation sample (see col 11, lines 5-20; col 13, lines 5-45).

Claim 7, Cook teaches:

The method of claim 1, wherein the scoring step (h) further comprises applying the validated Model Equation to the customers retrieved from the database in order to predict responses from the customers in a future promotional campaign (see col 11, lines 50-65; col 13, lines 5-45).

Claims 8-14 are written as system claims but contains the same limitations as claims 1-7, therefore, the same rejection is applied.

Claims 15-21 are written as article of manufacturer claims but contains the same limitations as claims 1-7, therefore, the same rejection is applied.

Response to Arguments

4. Applicant's arguments filed 01/04/2007 have been fully considered but they are not persuasive. The Applicant argues that Cook does not teach splitting an input data set into a test sample and a validation sample. The Examiner answers that Cook teaches a training sample (see col 12, lines 28-25) and a unknown sample (*i.e.* validation sample) where each individual in the unknown sample is assigned to a category obtained from the training sample (see col 11, lines 50-67). Therefore, contrary to Applicant's argument, Cook teaches a test sample (*i.e.* training sample) and a validation sample (*i.e.* unknown sample).

The Applicant argues that Cook does not say anything about identifying related independent and dependent variables using the test sample and that it appears that Cook identifies respondent/non-respondent before creating the training sample. The Examiner answers that Cook teaches that "the data source must include independent variables (*i.e.* individual profile features and dependent variables (*i.e.* the category into

which a profiled individual falls) and figures 11-13 teach the relationship between dependent variables (*i.e.* table's rows) and independent variables (*i.e.* table's columns) after creating a training sample. Therefore, contrary to Applicant's claimed invention, Cook teaches identifying related independent and dependent variables using the test (*i.e.* training) sample.

The Applicant argues that a density function is not a transformation type, which is defined as a mathematical operation that provides the strongest association between the identified related independent variables and the dependent variables. The Examiner answers that Cook teaches that "an individual whose category membership is unknown may be classified according to which region its individual features (*i.e.* p-tuple) occupies and determination of this region requires that the value of the probability density function for each category is calculated at the point defined by the features (*i.e.* p-tuple) of the unknown individual. The largest result determines the category to which the individual is assigned; the probability that the unknown individual belongs to this category is apparently the largest". Therefore, contrary to Applicant's argument, Cook's density function is a Transformation type function, as defined by Applicant's specification because Cook's density finds the strongest association between the identified related independent variables (*i.e.* individual features and true category); see figure 11-13 and the dependent variables (*i.e.* predicted categories; see figure 13).

The Applicant argues that Cook says nothing about estimating a coefficient for each related and dependent variables. The Examiner answers that Cook's figures 13 teaches a decision array where each element of the array is a coefficient between the

relationship between predicted category (*i.e.* dependent variable) and True category (*i.e.* independent variable) and where said coefficient presents a gain or loss (*i.e.* negative correlation) that can be assigned to each individual within that element. Therefore, contrary to Applicant's argument, Cook teaches the Applicant's coefficient limitation.

The Applicant argues that Cook does not score customers using validated Model Equations as a customer promotion response model for use in customer relationship marketing. The Examiner answers that Cook teaches "The goal of the invention is not only to identify an individual for targeting, but to estimate the proportions of selected subpopulations in a larger population. This allows comprehensive performance forecasts to be made. For example, the response rate and profit for a list of targeted individuals can be estimated. The invention employs estimated density functions together with a decision array correction procedure to estimate these proportions from a set of linear relationships. The estimated density functions and the decision array that are determined as best at achieving a desired objective are persisted" (see col 2, line 63 – col 3, line 10). Therefore, contrary to Applicant's argument, Cook scores customers using validated Model Equations as a customer promotion response model for use in customer relationship marketing as Cook estimates the response rate and profit for a list of targeted individuals.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LASTRA whose telephone number is 571-272-6720 and fax 571-273-6720. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ERIC W. STAMBER can be reached on 571-272-6724. The official Fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL
Daniel Lastra
March 24, 2007

RAQUEL ALVAREZ
PRIMARY EXAMINER